

E. R. KENT.
RAILWAY FROG AND CROSSING.
APPLICATION FILED SEPT. 23, 1908.

919,728.

Patented Apr. 27, 1909.

Fig. 1

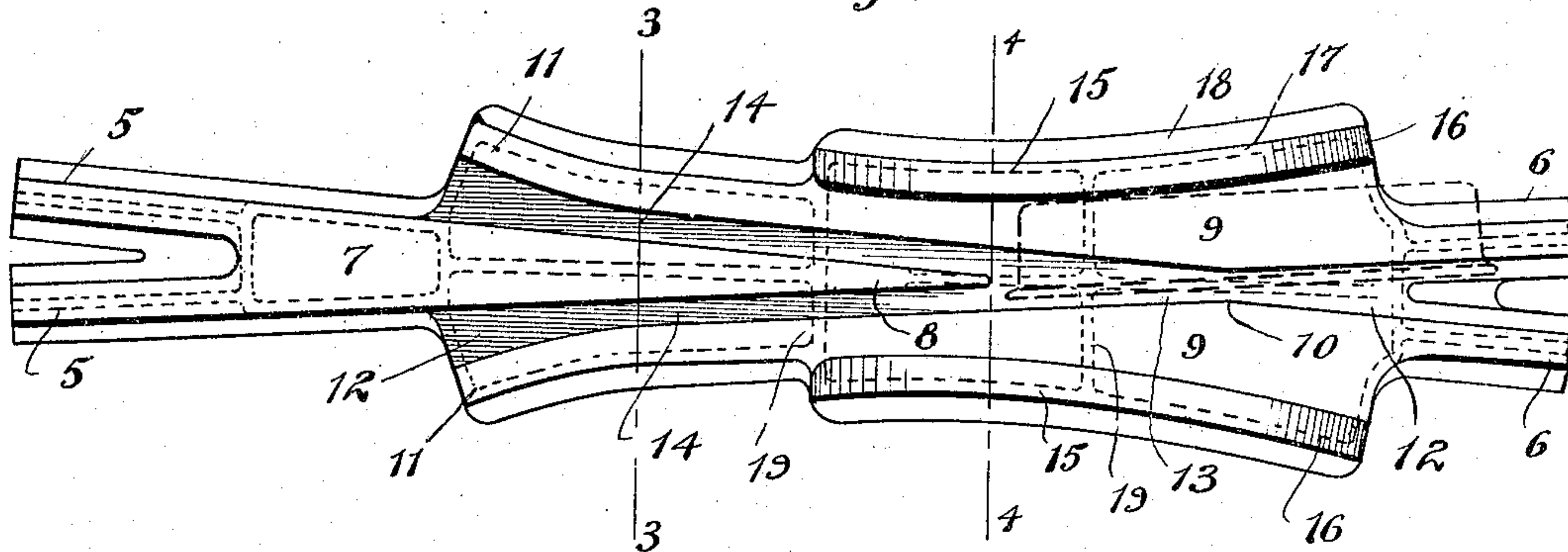


Fig. 2

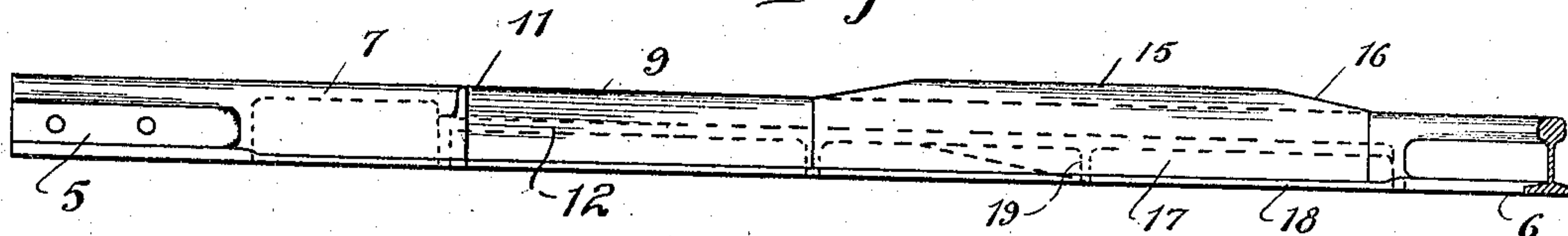


Fig. 3

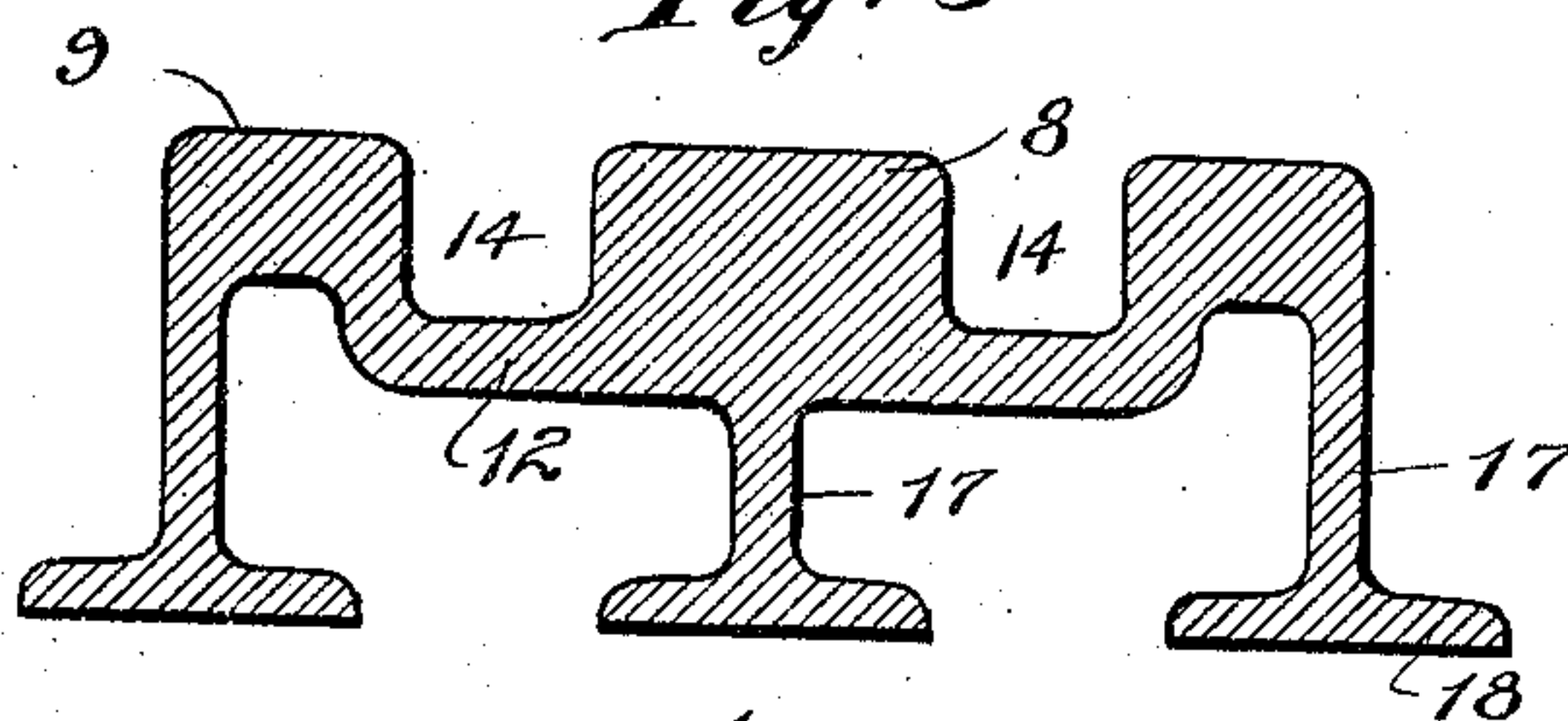
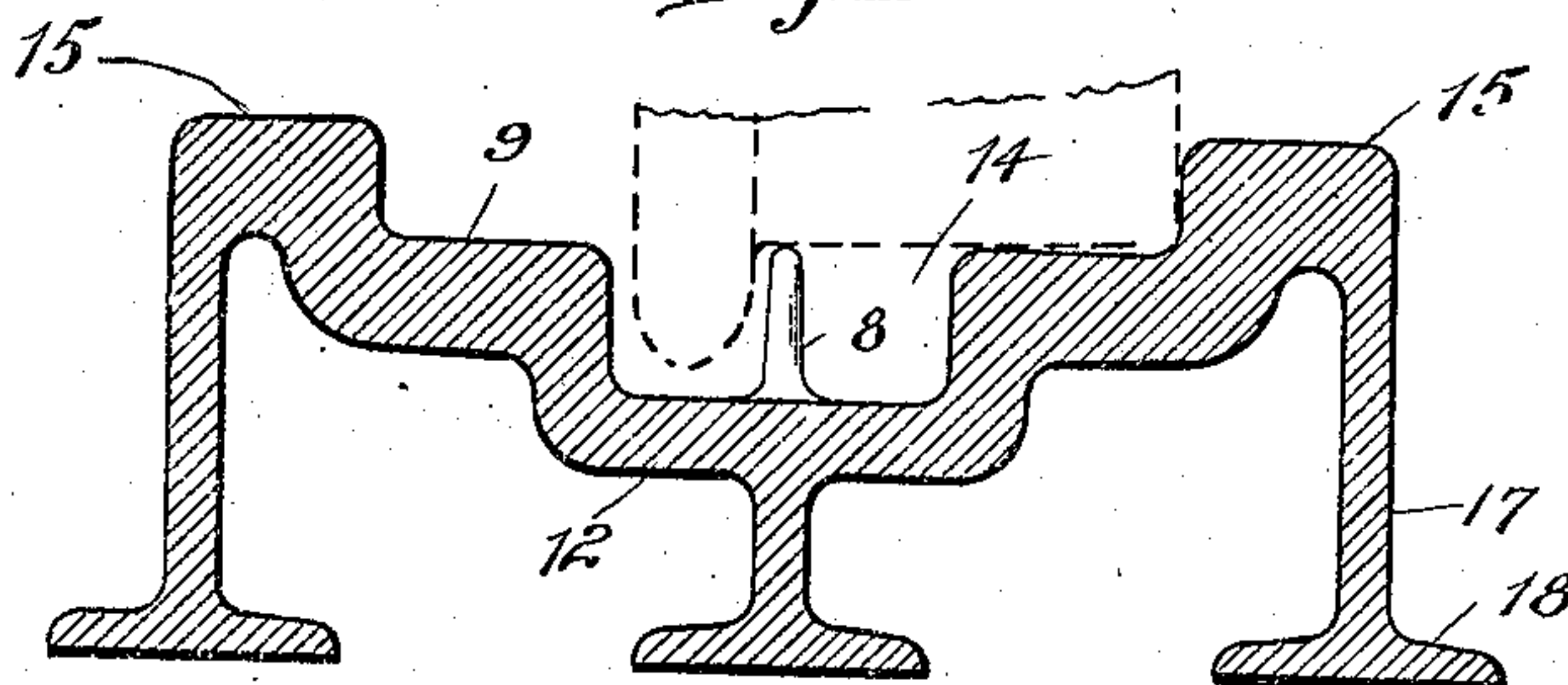


Fig. 4



Witnesses:

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UNITED STATES PATENT OFFICE.

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RAILWAY FROG AND CROSSING.

No. 919,728.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed September 23, 1908. Serial No. 454,307.

To all whom it may concern:

Be it known that I, EDWIN R. KENT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway Frogs and Crossings, of which the following is a specification.

Heretofore it has been the usual practice to construct railway frogs and crossings by building them up out of a number of pieces of rails and blocks, or filler pieces, and uniting the whole by means of bolts. In practice such built-up frogs and crossings are found to be defective on account of the jar and pounding of the trains, which cause the various parts to become worn or loosened, with consequent danger of derailment.

The present invention is designed to overcome these objections and defects and to provide a new type of frog or crossing which will be substantial and rigid in construction, which will have no parts to become loosened, and which will furthermore serve to guide the wheels through the frog or crossing, that is, in passing from one set of rails to the other. I secure these advantages by means of the novel device shown in the accompanying drawings, in which—

Figure 1 is a top plan view of a frog embodying this invention; Fig. 2 is a side elevation of the same; Fig. 3 is a sectional view on the line 3—3 of Fig. 1; and Fig. 4 is a sectional view on the line 4—4 of Fig. 1, showing the end of the frog point in elevation.

As indicated in these drawings, my improved frog is made entirely of one piece, having projecting ends 5—5 and 6—6 preferably made in the form of standard rail sections and adapted to be united directly to the crossing rails of the track. The end pieces 5—5 are shown as converging and the heads of the rail sections are continued from about the point of junction in a flat plate 7, forming a frog point 8. The heads of the projecting rail sections 6—6, which are, of course, shown as converging from the opposite direction, are continued by means of plates or tread members 9—9, the inner edges of which converge to the point 10, forming the throat of the frog, and then diverge parallel to the sides of the frog point for a convenient distance, and then turn outwardly as indicated at 11 so that the ends will form guides for the wheels

coming in from the left-hand side of the frog, as shown. A web 12 connects these side plates 9—9 and the frog plate 7, leaving a groove 13 forward of the frog point and grooves 14—14 at the sides of the frog point for the wheel flanges. I further insure the proper passage of the wheels through the frog by providing the plates 9—9 with upwardly extending projections or ridges 15 along the outer sides thereof, such ridges preferably extending from beyond the throat of the frog, at one end, to points at some distance beyond the point of the frog, at the opposite end. As indicated in Fig. 1, the inner edges of these ridges are arranged to engage with the wheel rims on the sides opposite to the flanges and thereby guide the wheels so that the flanges will not strike the extreme end of the frog point 8. In order to accomplish this guiding movement, without shock or jar to the wheels, I prefer to arrange the ridges 15 so that the inner edges approach nearest to the center line of the rail of the track on which the wheel to be engaged would enter the frog, at a point slightly in advance of the frog point and gradually recede away therefrom. As shown in Fig. 1, this is done by having the inner faces of the ridges 15 made substantially in the form of curves which lie tangent to lines parallel to a center line through the frog, such points of tangency being about opposite the end of the frog point. The ends of these projections or ridges 15 are beveled as indicated at 16, to provide for the passage of a wheel with a blind rim or a wheel of an unusually wide tread which might otherwise strike the abrupt ends of such ridges. The connected plates and webs forming the upper surface of the frog proper are provided with depending flanges or supports 17 having flanged bottoms 18 for engagement with the railway ties. These flanges 17 and the surface portions are further braced and connected together by means of a series of webs 19 extending across and lengthwise of the frog proper, the whole being formed in one piece or casting in order to make a rigid and compact structure. I prefer to form these frogs of metal having high tensile strength and suitable wearing qualities, to stand the heavy demand placed upon such devices.

Having thus described my invention, which I do not wish to limit to the exact form or arrangement herein shown and described, what

I claim and desire to secure by Letters Patent is:

1. A railway frog or crossing comprising plates adapted to form treads or wearing surfaces for the wheels, webs connecting said plates and leaving grooves between the same for the wheel flanges, the plate forming the frog point being made solid for a distance from the end of the point and being provided with a downwardly projecting supporting flange and end projections extending from said plates and webs, said projections being in the form of rail sections; all of said parts being formed of one piece, said ridges approaching nearest to the lines corresponding with the adjacent sides of the intersecting grooves, at points adjacent to the end of the frog point, and receding away therefrom in each direction, the arrangement being such that the wheel will preferably be gradually crowded over by one of said ridges in passing toward the frog point so that the wheel flange will not engage with the end of the frog point.

2. A railway frog or crossing comprising a wheel-supporting member having grooves formed therein for the wheel flanges, end projections adapted to be secured to rails, and upwardly projecting ridges for engagement with the wheel rims to guide the wheels through the frog or crossing.

3. An integrally formed railway frog hav-

ing a frog point comprising a flanged plate terminating in sections for engagement with rails, wing plates arranged to coact with said frog point and connected therewith by a web arranged to leave grooves for the wheel flanges, said wing plates being provided with terminals for connection with rails, and upwardly projecting ridges on said wing plates for engagement with the rims of the wheels to guide said wheels through the frog.

4. An integrally formed railway frog comprising a web member, a frog point extending upwardly from said web member, terminals on said point for connection with rails, wheel-supporting plates also connected with said web member and extending upwardly therefrom, leaving grooves between said members and said frog point, said wheel-supporting members being provided with terminals for connection with rails, curved guide ridges at the outer edges of said wheel-supporting members for guiding the wheels through the frog, depending flanges having widened bottoms for engagement with railway ties, and cross webs for bracing said parts, substantially as described.

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Witnesses:

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